



Birds on a Wire: Gamma Knife Radiosurgery for Two Schwannomas Along the Same Cranial Nerve, Suggestive of Asynchronous Development: An Illustrative Case

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Objectives: To describe a rare case of asynchronous development of two distinct schwannomas along the same vestibulocochlear nerve and to evaluate the feasibility, safety, and dosimetric considerations of repeat Gamma Knife radiosurgery (GKRS) in this unique scenario.

Methods: A 35-year-old woman with a right-sided Koos II vestibular schwannoma underwent initial GKRS using a 12 Gy prescription at the 65% isodose line. She remained clinically and radiographically stable for 12 years. After presenting with new right-sided tinnitus, follow-up magnetic resonance imaging (MRI) revealed a second, newly developed intracanalicular schwannoma along the same vestibulocochlear nerve, distinct from the previously treated lesion. A second course of GKRS was performed using updated imaging and treatment planning, with particular attention to minimizing cumulative radiation dose to the cochlea and modiolus.

Results: Repeat GKRS achieved excellent target coverage with minimal additional cochlear and modiolus exposure. The patient tolerated reirradiation without acute or delayed neurological or auditory deficits. Early post-treatment imaging demonstrated radiographic stability of both schwannomas and preservation of cranial nerve function.

Conclusion(s): This case highlights the rare occurrence of asynchronous schwannoma formation along a single cranial nerve and demonstrates that carefully planned repeat GKRS can be a safe and effective management option. Meticulous attention to dose summation and organ at risk constraints allows durable tumor control while preserving neurological function, supporting GKRS as a viable retreatment strategy in complex or multifocal vestibular schwannoma cases.

